

Sheet 6

- (1) Find the contents of the port after each of the following operations:
 - (a) $P1 = 0x65 \& 0x78$;
 - (b) $P1 = 0x70 | 0x6B$;
 - (c) $P2 = 0x95 \wedge 0xAA$;
- (2) Find the port value after each of the following is executed:
 - (a) $P1 = 0x65 \gg 2$;
 - (b) $P2 = 0x29 \ll 2$;
 - (c) $P1 = 0xD4 \gg 3$;
 - (d) $P2 = 0xA7 \ll 2$;
- (3) Write an 8051 C Program that finds the number of Zeros in an 8-bit data item.
- (4) A stepper motor uses the following sequence of binary numbers to move the motor. How would you generate them in 8051 C?

1100, 0110, 0011, 1001
- (5) Write a C 8051 program to send a byte serially one at a time via P2.6. The MSB should go first.
- (6) Write an 8051 C-program to send a byte serially one at a time via P1.5. The LSB should go first.

- (7) Write an 8051 C-program to convert EDH to decimal and display the digits on P1, P2, and P3.**
- (8) Assume that XTAL= 16 MHz. Find the TH1, TL1 value for 8051 to generate a time delay of 6 ms. Timer 1 is programmed in mode 1.**
- (9) Program Timer 1 of the 8051 to be an event counter. Use mode 1 and display the binary count on P1 and P2 continuously. Set the initial count to 10000.**
- (10) Program Timer 0 of 8051 to generate a square wave of 3 kHz. Assume that XTAL = 11.0592.**
- (11) Program Timer 0 of 8051 to be an event counter. Use mode 2 and display the binary count on P1 continuously. Set the initial count to 20.**